

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-6. (cancelled)

7. (currently amended): A method of producing a glass substrate for a mask blank, comprising:

~~a step of rough polishing a main surface of the glass substrate by the use of abrasive particles of a predetermined average particle size,~~

a step for eliciting a defect remaining on the main surface of the glass substrate, and
wherein a post-processing a precise polishing step that is carried out after the step for eliciting a defect and includes a precision polishing step for providing to provide the main surface with precision polishing; wherein

the precision polishing step being carried out so that the main surface has a roughness of 0.2nm or less in terms of the root mean square roughness (RMS);

the step of eliciting the defect comprising the step of; ~~magnifying a defect on~~ etching the main surface to magnify a crack by etching the main surface to the extent that the defect can be detected during a defect inspection step that is carried out after the precision polishing step;

the etching step being executed so that a load is restrained in the precision polishing step and a resultant amount of a turned-down edge of the glass substrate falls within a range between -2μm and 0μm after the precision polishing step.

8. (previously presented): The method of producing a glass substrate for a mask blank according to claim 7, wherein the post-processing step includes, in addition to the precision polishing step, a cleaning step for cleaning the main surface after the precision polishing step.

9.-11. (canceled)

12. (currently amended): A method of producing a glass substrate for a mask blank, comprising the steps of:

carrying out a rough polishing step for roughly polishing a surface of the glass substrate by using abrasive particles having a predetermined average particle size;

carrying out a precision polishing step for polishing the surface of the glass substrate ~~by using abrasive particles having an average particle size that is smaller than the aforesaid predetermined average particle size~~ so that the main surface has a roughness of 0.2nm or less in terms of the root mean square roughness (RMS);

etching, ~~after a rough polishing step and~~ prior to the precision polishing step, a roughly polished surface of the glass substrate to elicit a crack which extends from the surface of the glass substrate in the direction of the depth and which might remain on the surface of the glass substrate even after the precision polishing step; ~~and~~

the etching step being executed so that a load is restrained in the precision polishing step and a resultant amount of a turned-down edge of the glass substrate falls within a range between -2 μ m and 0 μ m after the precision polishing step; and

carrying out a defect inspection step after the precision polishing step;

wherein the crack is magnified by the etching step to the extent that the crack can be detected by the defect inspection step.

13. (previously presented): The method of producing a glass substrate for a mask blank according to claim 12, further comprising a cleaning step of cleaning the main surface of the glass substrate after the precision polishing step.

14. (previously presented): The method of producing a glass substrate for a mask blank according to claim 13, wherein the surface of the glass substrate after the cleaning step has a roughness of 0.2 nm or less in terms of the root mean square roughness (RMS).

15. (original): The method of producing a glass substrate for a mask blank according to claim 13 or 14, wherein the cleaning step uses a solution having an etching function as a cleaning

solution, and the cleaning step is carried out under a condition that causes the glass substrate to be removed by more than 0 μm and below 0.01 μm by etching.

16. (previously presented): The method of producing a glass substrate for a mask blank according to claim 12, wherein the defect inspection step is carried out by a visual inspection.

17. (previously presented): The method of producing a glass substrate for a mask blank according to claim 12, wherein the etching step removes the surface of the glass substrate that is subjected to precision polishing by 0.01 to 0.2 μm .

18.-19. (canceled).

20. (previously presented): A method of producing a glass substrate for a mask blank according to claim 7, wherein the precision polishing step is carried out so that the surface of the glass substrate has flatness required for a selected one of ArF excimer laser, F2 excimer laser, and EUV.

21. (previously presented): A method of producing a glass substrate for a mask blank according to claim 12, wherein the precision polishing step is carried out so that the surface of the glass substrate has flatness required for a selected one of ArF excimer laser, F2 excimer laser, and EUV.

22. (previously presented): A method of producing a glass substrate for a mask blank according to claim 12, wherein the abrasive particles used in the rough polishing step are cerium oxide while the abrasive particles used in the precision polishing step are colloidal silica.

23. (previously presented): A method of producing a glass substrate for a mask blank according to claim 12, wherein the etching step is an isotropical etching step.

24. (new): The method of producing a glass substrate for a mask blank according to claim 7, wherein the etching step is executed at an etching rate between 0.2nm/minute and 2nm/minute.

25. (new): The method of producing a glass substrate for a mask blank according to claim 12, wherein the etching step is executed at an etching rate between 0.2 nm/minute and 2nm/minute.